AMERICA'S NO.1 LIGHTING JOB
United States Military Academy, LIGHTED is the most outstanding Illumination job in America! United States Army Engineers' exacting specifications, definitely detailing all elements pertaining to an installation of the highest quality, are engineered into a lighting unit that we named "GUTH CADET"! This unit surpasses anything on the market in the field of "Quality Fluorescent Illumination"!
PHOTO BY SIGNAL CORPS, U. S. ARMY
Guth CADETS relight WEST POINT

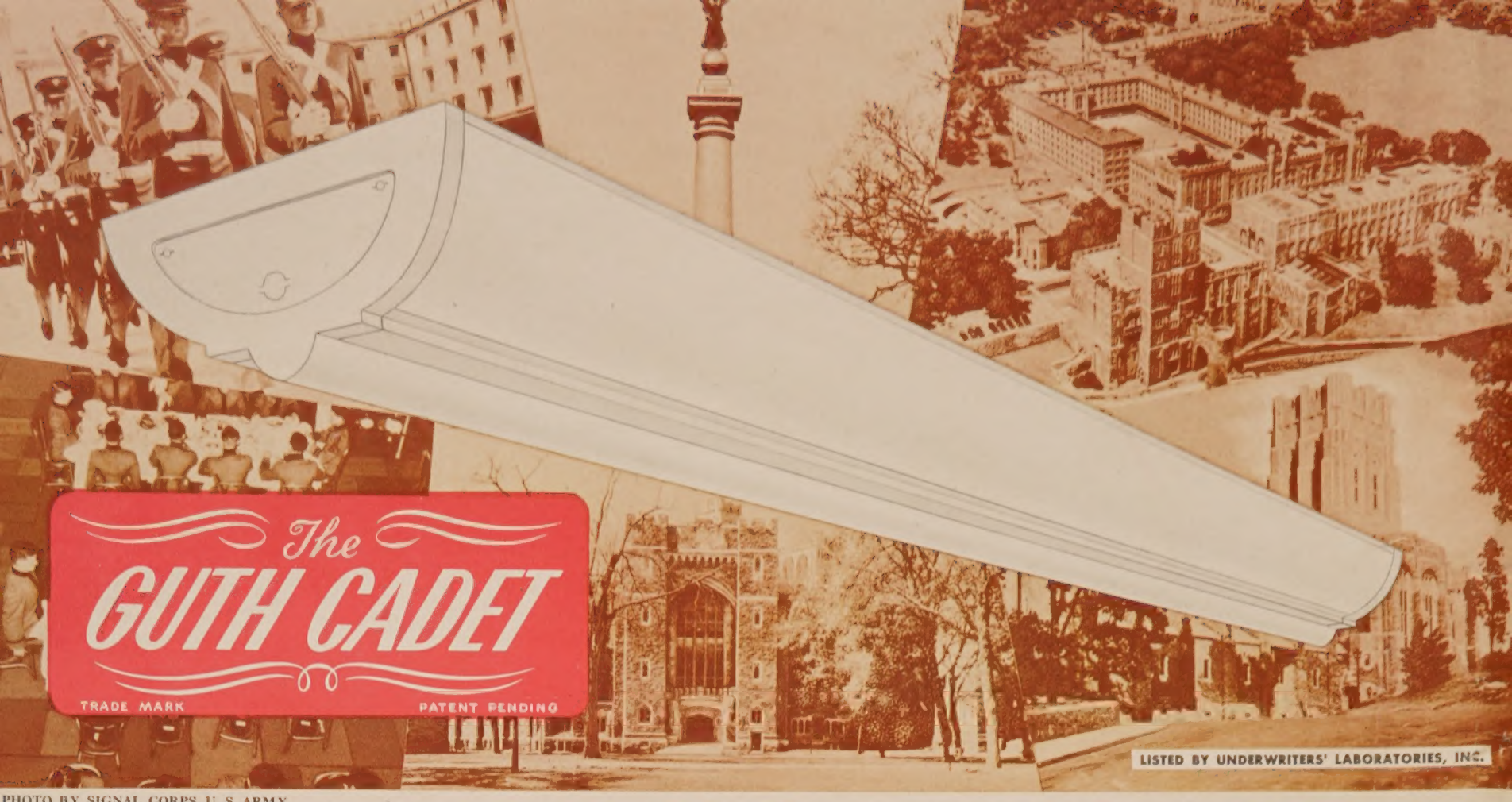


PHOTO BY SIGNAL CORPS, U. S. ARMY

America's No. 1 Luminaire!

GUTH CADET is ***truly*** America's No. 1 Luminaire for it offers the ultimate in fine performance, efficiency, appearance, and maintenance. In a correctly planned installation CADETS, luminous-indirect luminaires, afford highest quality illumination possible! The CADET distributes 90% of its light upward and 10% downward, to produce higher intensities of uniform illumination for quick, sure visual acuity and better brightness ratios for utmost seeing comfort.

Translucent sides softly illuminate the CADET's exterior and pleasantly "blend" the luminaire with ceiling brightnesses. The controlled reflection, diffusion and transmission of light provided by these luminous panels give the CADET it's exceptionally high efficiency!

The GUTH CADETS, artistically designed in gracefully curved lines, harmonize with, and become an integral part of any interior, adding a modern note to its atmosphere. The luminaires are engineered with special mounting and construction features, as discussed below, to keep wiring and installation work to a minimum. CADET's luminous reflectors are securely "keyed" in place and are conveniently removed for cleaning or servicing.

608 WEST POINT STUDY ROOMS RELIGHTED

The Study Rooms were the prime consideration in relighting West Point for it is here Cadets do their most intensive seeing. These rooms were previously lighted with a 100-Watt enclosing-globe fixture, that provided an overall 5 foot-candles, and a 150-Watt study lamp, that concentrated 30-35 foot-candles within a small radius about its base (see Before Photo). Under this "spotty" lighting, Cadets received sufficient light only when their work was within this limited area. Even then, harsh contrasts throughout the room placed a severe strain on their eyes.

Perfect Lighting was a ***necessity*** here! GUTH CADETS filled that need with high quality indirect illumination properly distributed to give comfortable easy-seeing levels of light all over the room. West Point Cadets now have ideal light for studying in any position in the room whether their work is on a horizontal or inclined plane. All direct glare and practically all reflected glare has been eliminated so that work in pen or pencil is accomplished without eyestrain.

PROOF OF GUTH CADETS' PERFORMANCE

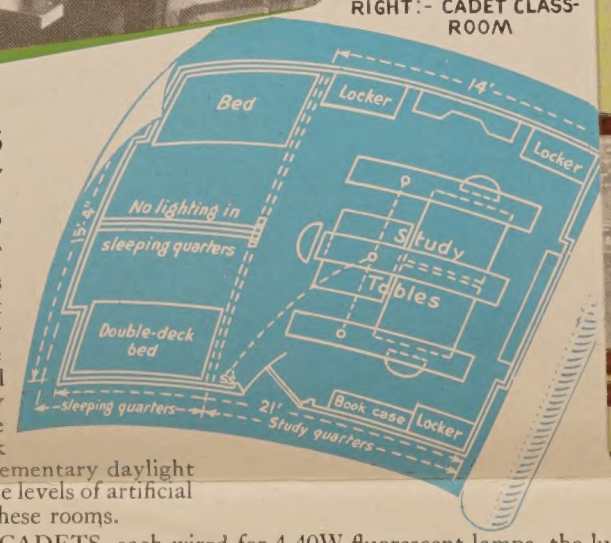
Providing the best possible seeing conditions as required in West Point Study Rooms, involves both quantity and quality of light. GUTH CADETS' fine performance here is best judged by the foot-candle and brightness readings taken by the Electrical Testing Laboratories. Average illumination on study table (see plan below) is 45 foot-candles; in outer areas of room, 29.8 f. c.; and on an inclined plane of 45°, in vicinity of table, 23.7 f. c. Quality of the illumination is further indicated in the brightness readings: on the CADET, 45° to longitudinal axis, 221 foot-lamberts; on darkest areas of ceiling, 106 foot-lamberts; on walls at eye-level, 12.9 to 15.9 foot-lamberts.

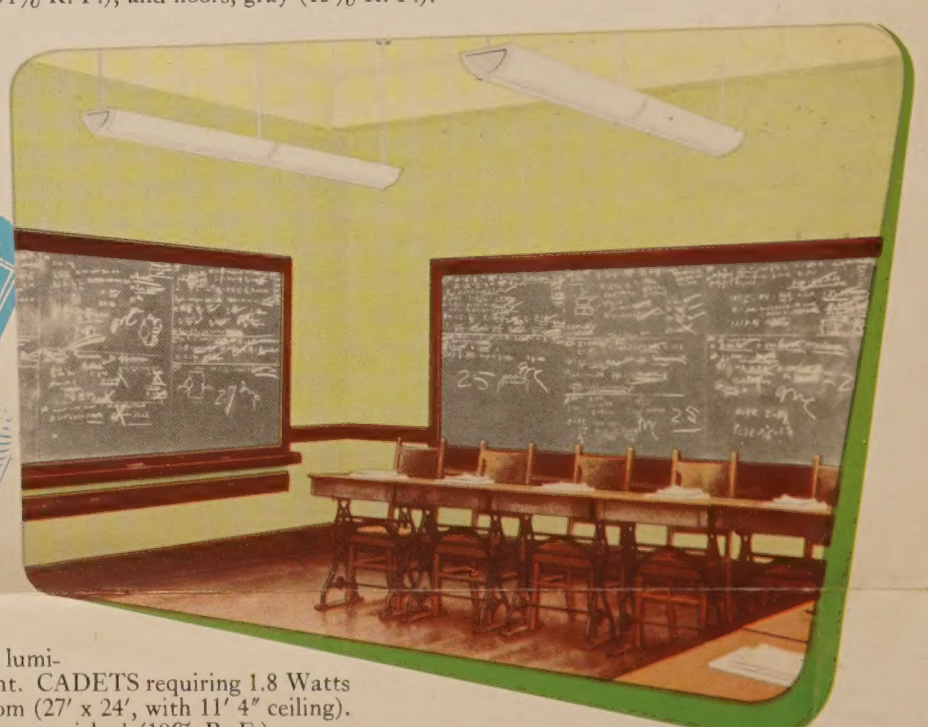
The detailed planning of West Point's relighting was followed-up with accurate measurements of all these details in the finished installation. Checks on the stroboscopic effect, noise factor, and radio interference with the GUTH CADET proved more than satisfactory. The reflection factors of the paints used in repainting the Study Rooms were also re-checked.

LAYOUT DATA ON WEST POINT STUDY ROOMS

The area to be lighted in Study Rooms was 15′ 4″ by 14′. Sleeping quarters (7′ deep) at end of room are not lighted (see plan below, left). Three CADETS (M3052 for 4 40-W lamps) are mounted in each Study Room as shown in plan below and spaced on 3′ 9½″ centers. CADETS are suspended 17″ from 10′ 6″ ceiling. In repainting these rooms, ceiling was painted an eggshell white (77% Reflection Factor), walls, light green (54% R. F.), and floors, gray (15% R. F.).

ABOVE:- STUDY ROOM, AFTER
LEFT:- STUDY ROOM, BEFORE
RIGHT:- CADET CLASSROOM





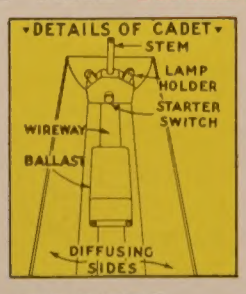
CLASSROOMS USE QUALITY CADET LIGHTING

The GUTH CADET Lighting System was extended to the Cadet Classrooms to further protect eyesight. The combination distant and close vision required by classroom work, the shorter period of task duration, and the complementary daylight available here reduced the levels of artificial illumination needed in these rooms.

Using 8-Foot GUTH CADETS, each wired for 4-40W fluorescent lamps, the luminaires are spaced on 8′ 0″ by 12′ 0″ centers and suspended at 8′ 4″ mounting height. CADETS requiring 1.8 Watts per square foot deliver 30 foot-candles initial illumination in the typical Classroom (27′ x 24′, with 11′ 4″ ceiling). Classrooms are repainted in the same manner as Study Rooms, except floor was varnished (10% R. F.).

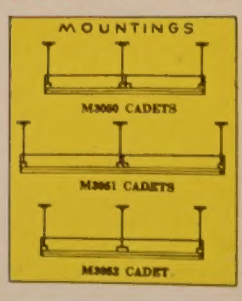
GUTH CADETS ARE *FINELY* ENGINEERED FOR *FINE* LIGHT ENGINEERING

DESCRIPTION: All GUTH CADETS are 10½″ wide and 5½″ deep. Die-panelled decorative ends and steel spine with its reinforcing "V"-design are finished in 300° WHITE ENAMEL. Translucent side reflectors have bound-on metal edging. CADETS are wired High-Power-Factor (95% av. min.) with Tulamp Ballast. Ballasts are mounted in exposed steel housings for dissipation of heat and better operating efficiencies. Steel spine serves as a wireway



and each end has ¾″ K. O. for continuous wiring. White sockets of 90° turn type are used and starter switches are accessible without removing lamps.

MOUNTING DATA: GUTH CADETS may be suspended individually or in continuous rows. The M3050 and M3051, mounted individually, require two GUTH Single Stem Hangers (M3337), and M3052, three Single Stem Hangers. In continuous rows,



CADETS are locked together with ⅜″ nipple and two ¼″ stove-bolts through the ¾″ and two ⅜″ K. O.'s provided in ends. For more data, see GUTH Mounting Sheet, Form No. 809.

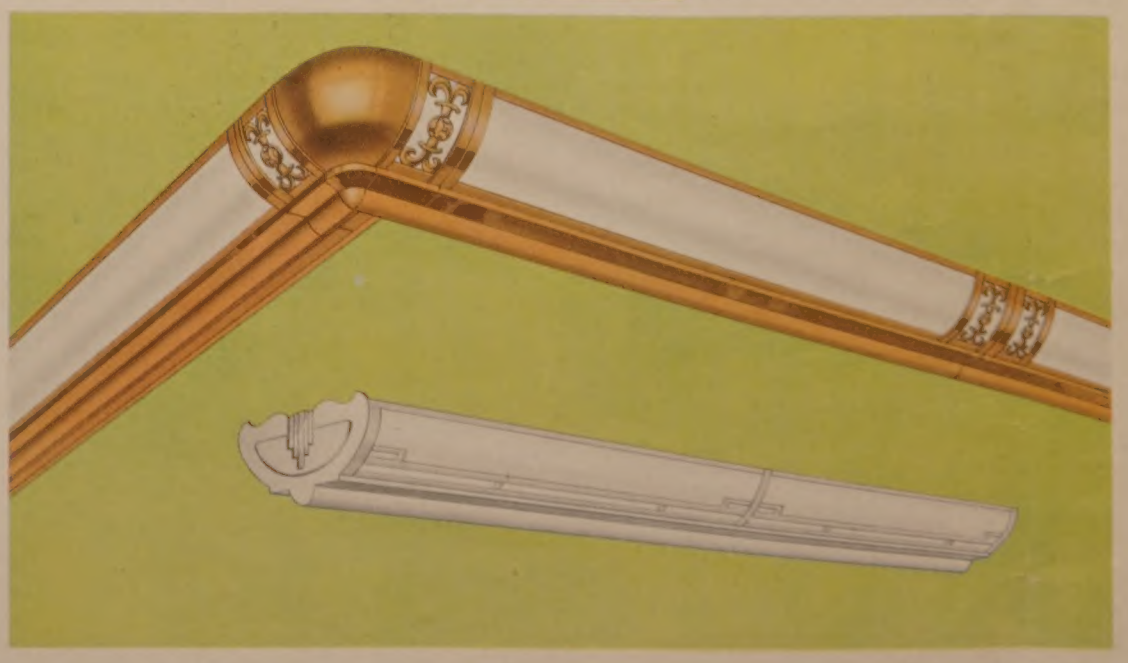
Cat. No.	Lamp Wtg.	Fixt. Lgth.	Std. Drop	Shp. Wt.
M3050	2-40W	48⅛″	29″	40#
M3051	2-100W	60⅛″	29″	60#
M3052	4-40W	96⅛″	29″	85#

NEW ORNAMENTAL CADETS

The new ORNAMENTAL CADETS were developed for public foyers, entrance lobbies, banks, conference rooms, or wherever some special treatment of the Luminaire is desired, in addition to a superlative lighting job. These Luminaires are executed in patterns of simple beauty that give an installation a definite character of individuality. The ORNAMENTAL CADET has same high efficiency as standard CADET.

The CADET, upper right, is finished in Light Natural Bronze, with pierced bronze panels and white translucent sides. Hangers for this type are also in Natural Bronze Finish. Illustration at right shows this CADET with Mitered Corner (M3059), used for bay or rectangular layouts to give installation a finished integral appearance. This model is available for 2-40W (M3057), and 2-100W (M3058) fluorescent lamps.

The CADET, lower right, is finished 300° WHITE ENAMEL with Polished Aluminum Flutings. Pleasantly curved lines of panelled ends are contrasted with stoic design of the flutings. The expanse of the luminous side panels is broken with simple white steel lacings. This model is made for 2-40W (M3055) and 2-100W (M3056) fluorescent lamps, and uses Single Stem GUTH Hangers (M3337).



Leaders in LIGHTING Since 1902

THE EDWIN F. Guth COMPANY

2615 Washington Ave. St. Louis 3, Missouri

FORM 810—6-46 PRINTED IN U. S. A.

GUTH CADETS, and all GUTH Products Are Nationally Distributed Through Established Wholesalers *Only!*

INTENSIVE study during four years at West Point places severe strain on the eyes. Barracks' Rooms where Cadets do major part of their studying had previously been lighted with a widely accepted illuminant that was considered good for student use. However, the Academy Board, formed to determine the adequacy of lighting in Study and Classrooms, found through extensive eye-studies that more light, better distributed light and higher quality light was needed to conserve Cadet eyesight.

The Board's study covered an eight-year period (1936 to 1943) and the evidence uncovered provides the Lighting Industry with most convincing data on "light versus sight". The study revealed that as high as 21.7% of the men in a class failed to meet visual requirements at graduation. Further, the vision of 160 officers was checked one year after their graduation from West Point. Relieved of intensive close study, 122 (76.3%) of these officers regained 20/20 vision, or their vision definitely improved.

Analysis of Cadets' visual defects showed 57% of these men suffered a decline of 36% visual efficiency (per A. M. A.* Ratings), and 29% fell below the 50% rating! It also disclosed that three-fourths (75%) of visual deficiencies were "myopia" (near-sightedness) or its allied condition, "myopic astigmatism", which medical authorities attribute to use of eyes under unfavorable, inadequate light.

To correct the inadequate lighting and conserve eyesight at West Point, GUTH CADET luminaires were installed. This installation sets new practical standards for Quality Illumination, with high intensities of uniformly distributed indirect lighting, free of direct glare, practically free of reflected glare, and with correct brightness contrasts and ratios. The ***perfect*** lighting job! *American Medical Association

SET *new* QUALITY STANDARDS of *Light* for *Sight*

THOROUGHLY ENGINEERED INSTALLATION IS FINE EXAMPLE OF NEW LIGHTING TECHNIQUE

In order to provide West Point with the best possible ***seeing*** conditions, competent engineering counsel was secured to evaluate every factor affecting the final lighting results, even to unusual study positions Cadets might assume!

Many types of fixtures, Incandescent and Fluorescent, were tested before the Luminous-Indirect GUTH CADET was selected. Wattage consumption, radio interference, stroboscopic effect, and noise were checked. Brightnesses, foot-candles, and

light distribution on horizontal and inclined planes were measured to establish the quality of light considered best. Every detail including color for window shades, and textures and colors of paint for walls, ceilings and floors was considered!

Consequently, the relighting at West Point offers not only definite proof of the fine results possible with a completely engineered luminaire, but also affords a model example of procedure in applying the new technique of fully engineered lighting jobs!

Guth CADETS relight WEST POINT

IN SCHOOLS...

A, B, C: Oak Park and River Forest Township High School, (Ill.), enjoys Quality CADET Illumination in Classroom, Sight-Saving Room, and Principal's Office. Classroom, **A**, (28′ x 22′ — 11′ ceiling), uses 2 rows of CADETS (2-100W) to produce an average of 28 F. C. Brightness readings at 90° to rows show 390 foot-lamberts on sides of CADETS with 38 to 49 foot-lamberts on walls. Sight-Saving Room, **C**, (20′8″ x 22′9″ — 13′ ceiling) uses CADETS (2-100W) in 3 rows mounted on 6′ centers to produce 50 F. C.

D, E: Villa Maria Academy, Westchester, Pa., wanted the best seeing conditions science could produce, so GUTH CADETS were installed in Class and Study Rooms where formerly they had an average of 4 F. C. of light. In Classroom, **D**, (13′ x 22′ — 14′ ceiling) CADETS (2-40W) are suspended at 11′4″ mounting height in 3 rows on 6′ centers, and produce 25 F. C. In Study Room, **E**, CADETS (2-100W) are arranged in 3 rows on 9′ centers. CADETS produce 40 F. C. on horizontal plane and 18 F. C. on vertical plane.

IN DRAFTING ROOMS...

F, G: Large National Organization, provides sight-saving light in drafting room with an installation of CADETS in which all details affecting the quality of the lighting results were carefully engineered. Installation delivered 100 F. C. initially with 75 F. C. maintained. The CADETS (2-100W) are arranged in rows on 5′6″ centers, mounted at a 9′ height from a 10′10″ ceiling. The area lighted is 3500 square feet.

every installation is additional proof of

Guth CADETS

Superior Performance!

IN OFFICES...

H: Philadelphia Electric Company, Coatsville, Pa., enjoys 50 F. C. of quality illumination with CADETS (4-40W) mounted in 3 rows on 6½″ centers and suspended from a 12′ ceiling to a 9′6″ height.

J, K: Government Offices, use CADETS (4-40W) for 56.6 F. C. of quality light. CADETS are suspended from a 9′2″ ceiling at a height of 7′2″, in rows on 5′6″ centers.

L, M: Municipal Radio Division, has CADETS in control and transmitter rooms. CADETS (2-40W) are suspended at 8′9″ height from 11′2″ ceiling. In control room, (29′ x 22′), CADETS, in rows of 7′ centers, provide 48-50 F. C. In transmitter room, (16′ x 22′), rows of CADETS are on 8′ centers and supply 25 F. C.

N: United Illuminating Company, New Haven, Conn., installed CADETS in machine room, (64′ x 29½′), to provide 37 F. C. of Illumination. CADETS (4-40W) are mounted on 29″ drop from a 12′6″ ceiling and arranged in rows on 7′ centers.

every 'CADET' is Proof of: *Guth — "Leaders in Lighting Since 1902"!*